

Model SWA1041
Model SWA2041
Active Video Switch

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Version SWA1041 Rev 1 1-25-2001 JAK/JWS

UNPACKING

The Active Video Switch package includes the following items:

SWA1041/SWA2041 Active Video Switch Unit
12VDC Power Supply
This operation manual

Please inspect all items carefully and report damaged or missing items to your dealer or MicroImage Video Systems.

CONNECTIONS

Product Overview

The MicroImage Active Video Switch model SWA1041 is designed for use with Composite Video and/or B&W video signals, while the SWA2041 is for S-Video signals. Each is capable of selecting between up to four video sources, either at the press of a button or by remote serial control. An LED beside each switch indicates the current active video source.

Power

The Active Video Switch uses a 12VDC wall plug power supply or an optional universal table top power supply. For medical applications, a special low leakage power unit is also available. Connect the power supply to a suitable power source. This product will also operate from an external source of 9 to 20VDC

Video Connections

The SWA1041 uses standard BNC connectors for all video inputs and the video output. The SWA2041 utilizes standard 4-pin mini-DIN connectors for S-Video (YC) inputs and output.

Serial Control Connector

An 8 pin mini-DIN serial connector labeled **REMOTE** allows the user to interface the Active Video Switch with a serial port on a computer or other control device.

Note that a special cable may be necessary in order to use remote serial control. The SWA1041/2041 can use an 8 pin mini-DIN serial connector with industry standard pin connections, but only requires Rx/D, Tx/D, and Ground. The computer or device on the other end of the serial cable may require a different type of connector. Contact your dealer or MicroImage Video systems for the proper cable or pinout information.

Synchronous Switching

The Active Video Switch is set at the factory for synchronous operation, meaning that it will wait for the next vertical blanking interval before selecting another input. This prevents the image from jumping and momentarily losing sync whenever the unit is switched, provided that the video sources are synchronized (or Genlocked) with each other.

Timing information is derived from the signal on INPUT A. If the signal sources on the remaining inputs are not locked to the signal on INPUT A, the image may momentarily break up or roll when switched.

Some applications may require non-synchronous operation, such as where there are no sync pulses on the input signals. In this case, the Active Video Switch will not detect a sync pulse and will switch asynchronously. An internal DIP switch can be set to force the unit to operate asynchronously regardless of input signal (see Internal Switch Settings).

OPERATION

Power Switch The Power Switch and power indicator LED are located on the right side of the front panel.

Switches A-D The Active Video Switch is designed to be easy to operate while also providing maximum flexibility. A variety of operating modes are built into the unit, and are selectable by an internal DIP Switch (see Internal Switches). The functions of the front panel controls in each mode are listed below.

Mode 0 BINARY SELECT - With no switches depressed, source A will be displayed. While switch A is depressed, source B will be selected, until the switch is released. Holding switch B selects source C, and holding both switches A and B selects source D. This mode is intended for use with external digital connections or relays.

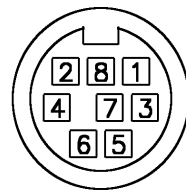
Mode 1 SELECT MODE - Depressing switch A will select the video source from connector A, and will illuminate the red LED next to switch A. Switch B will select the source on connector B, and so on. The selected video source will appear on the output connector.

Mode 2 UP/DOWN MODE - Switch A advances the active channel to the right, while Switch B selects to the left. For example, pressing A will cause the unit to switch from source A to B, pressing A again will switch from B to C, and pressing A again will switch from C to D. The next press of switch A will jump from source D back to A. This is also referred to as "scanner mode".

Mode 3 SERIAL MODE - The front panel select switches do not have any effect. All channel switching is via serial port.

Mode 4 SELECT/SERIAL MODE (Factory Default) - Switches A through D select the corresponding video inputs as in mode 1, and the serial port may also be used.

Remote Control EIA232/RS232 Serial Commands should be transmitted in the form 8 data bits, no parity and one stop bit (8N1) at 2400 baud. The ASCII characters "A", "B", "C", and "D" are recognized by the unit and are used to select the corresponding video input. Sending a "Q" to the unit will return the currently selected input. ASCII A, B, C or D will be returned. Note all commands are upper case.



SERIAL/EXT
PINOUT

- 1 - SELECT 1
- 2 - SELECT 2
- 3 - Tx D
- 4 - GROUND
- 5 - Rx D
- 6 - POWER SW
- 7 - SELECT 3
- 8 - SELECT 4

Binary remote control is also available through the 8 pin remote connector for the modes listed above. One input line corresponds to each of the four input select switches.

INTERNAL SWITCHES

The SWA1041/2041 Active Video Switch contains a block of 4 internal DIP Switches. The factory default settings may be altered by the user for special applications as noted in the various sections of the manual. It is strongly recommended that this be done by a competent service technician. Anti-static handling precautions should be observed while the unit is open.

Access to these switches requires removal of either the front or back panel of the unit, attached with 2 Philips screws. Once the end is unfastened, the chassis, top cover, and circuit board are free to slide. Sliding the top cover off is preferred, rather than removing the board from the chassis, due to the risk of either static or physical damage.

The DIP switch module, a red rectangle near the left front corner of the board, has four numbered switches. The functions of these are as follows:

- Switches 1- 3**
- 1 OFF/2 OFF/3 OFF = Mode 0
 - 1 ON/2 OFF/3 OFF = Mode 1
 - 1 OFF/2 ON/3 OFF = Mode 2
 - 1 ON/2 ON/3 OFF = Mode 3
 - 1 OFF/2 OFF/3 ON = Mode 4 (Default)

- Switch 4**
- ON = Synchronous Operation (Factory Default)
 - OFF = Asynchronous

IN CASE OF DIFFICULTY

If you are experiencing problems with any MicroImage product, you can contact MicroImage Support using the following methods:

- | | |
|-------|------------------|
| Phone | 610-754-6800 |
| Fax | 610-754-9766 |
| Email | support@mivs.com |
| Web | www.mivs.com |

SPECIFICATIONS

Main Unit

| | |
|----------------------|---|
| Front panel switches | A, B, C, D input selects and Power |
| Sync system | RS170A, NTSC, EIA, PAL |
| Input levels | |
| NTSC | 1.0 Vpp composite, 75 Ω |
| S-Video | 1.0 Vpp (Y), 0.286 Vpp burst (C), 75 Ω |
| TTL level remote | 5Vpp (active pull up resistors in unit) |
| RS232 remote | EIA232 standard, 2400 baud, 8N1 |
| Output levels | |
| NTSC, S-Video | Same as respective input ±3% into 75 Ω |
| Gain matching | Typically withing 2% |
| Bandwidth | Greater than 30 Mhz |
| Synchronization | Vertical interval switching (synchronous on) |
| Connectors | |
| NTSC | BNC Female |
| S-Video | 4 pin mini-DIN Female (Std. S-Video conn.) |
| Remote | 8 pin mini-DIN Female |
| Power | 2.1mm coaxial barrel connector |
| Temperature | |
| Operating | 0° ~ 40° C (32° ~ 104° F) |
| Storage | -40° ~ 60° C (-40° ~ 140° F) |
| Humidity | |
| Operating | 10% ~ 90% (non-condensing) |
| Storage | 5% ~ 95% (non-condensing) |
| Power | 9 - 20 VDC, +12VDC typical, neg ground, 3W max |
| Size | 5.60" (142 mm) x 5.95" (151 mm) x 1.60" (40 mm) |
| Weight | 16 oz. (450 g) |

Manufactured in Bechtelsville, PA USA by MicroImage Video Systems

Standard Power Unit - Wall Plug

| | |
|-------------|---|
| Part Number | DPD120050-P5 |
| Input | 120VAC, 60Hz, 9W |
| Output | 12VDC, 500mA non-regulated |
| Type | Linear, very low leakage |
| Size | 3.2" (78mm) x 1.9" (48mm) x 1.3" (32mm) |
| Weight | 8 oz. (227g) |

Option PU Power Unit - Table Top with Universal Input

| | |
|-------------|---|
| Part Number | DTS120150U/AC1-P5 |
| Input | Universal, 100-240VAC, 47-63Hz, 0.4A, 3wire |
| Output | 12VDC, 1.5A, regulated |
| Type | Switching, leakage about 160uA |
| Size | 3.9" (99mm) x 1.9" (48mm) x 1.4" (36mm) |
| Weight | 6.5 oz. (184g) without power cord Includes 120V US 3 wire power cord |

WARRANTY

MicroImage Video Systems warrants that each Active Video Switch is free from defects due to faulty materials or improper workmanship for a period of one (1) year. MicroImage Video Systems further warrants that any part which proves defective in materials or workmanship within one (1) year, will be replaced or repaired at no cost to the user. Labor to replace defective parts will be done without charge, provided the equipment is returned to MicroImage Video Systems prepaid, insured and properly packaged. Prior return authorization must be obtained from MicroImage Video Systems.

NOTE

This warranty covers the MicroImage Active Video Switch only.

CONDITIONS

This warranty is void if the warranted part has been altered or subjected to abuse or misuse. Defective parts must be returned to MicroImage Video Systems

SOLE WARRANTY

This Warranty is in lieu of all other warranties expressed or implied including, without limitation, any implied warranty or any implied warranty of fitness for a particular purpose. MicroImage Video Systems shall have the final right to determination as to the existence and cause of any defect and its appropriate adjustment in accordance with the terms of this warranty. In no event shall MicroImage Video Systems be liable for any consequential or collateral damages.

RETURNS

All returns MUST have an RMA number. Please call, fax or email for an RMA form. The RMA form will have the proper shipping address for returns.

| | |
|-------|------------------|
| Phone | 610-754-6800 |
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| Email | service@mivs.com |